

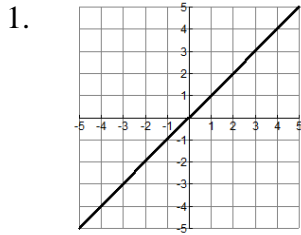


3.4 Library of Functions & Piecewise Functions

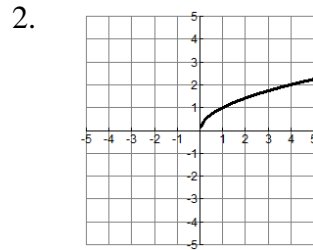
2017-18

Name _____ Date _____ Period _____

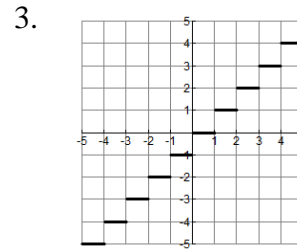
Match each parent graph with the correct parent function and name the function.



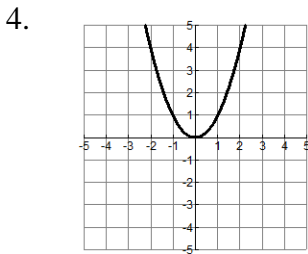
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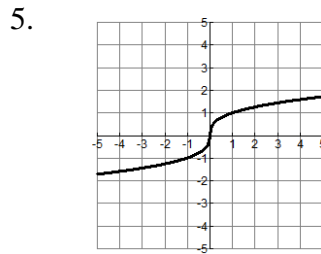
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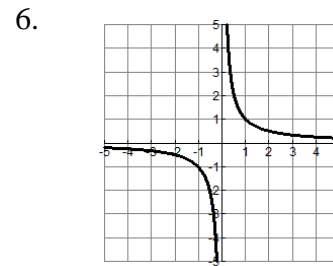
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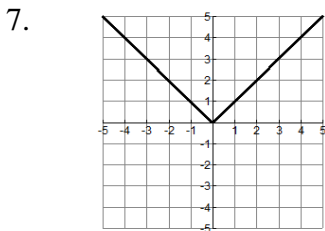
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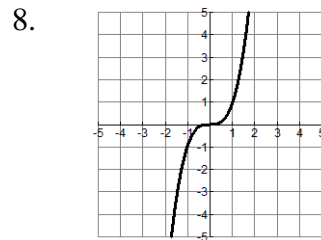
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Name: _____



Name: _____

a) $f(x) = \sqrt{x}$

b) $f(x) = x^3$

c) $f(x) = \frac{1}{x}$

d) $f(x) = x^2$

e) $f(x) = \sqrt[3]{x}$

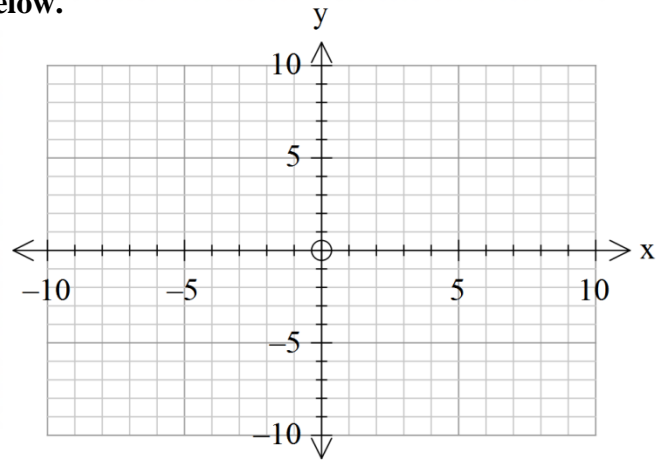
f) $f(x) = |x|$

g) $f(x) = x$

h) $f(x) = \text{int}(x)$

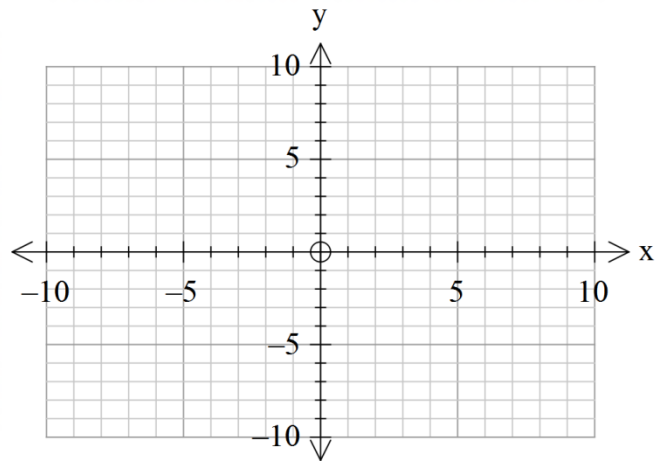
Sketch the graph of each piecewise function defined below.

$$9. f(x) = \begin{cases} x^2, & \text{if } x < 0 \\ 2, & \text{if } x = 0 \\ 2x+1, & \text{if } x > 0 \end{cases}$$



Find: $f(-2) =$ $f(0) =$ $f(2) =$

$$10. f(x) = \begin{cases} 2x-4, & \text{if } -1 \leq x \leq 2 \\ x^3, & \text{if } 2 < x \leq 3 \end{cases}$$



Find: $f(1) =$ $f(0) =$ $f(2) =$ $f(3) =$

In problems 11-14 graph the function and find each of the following listed.

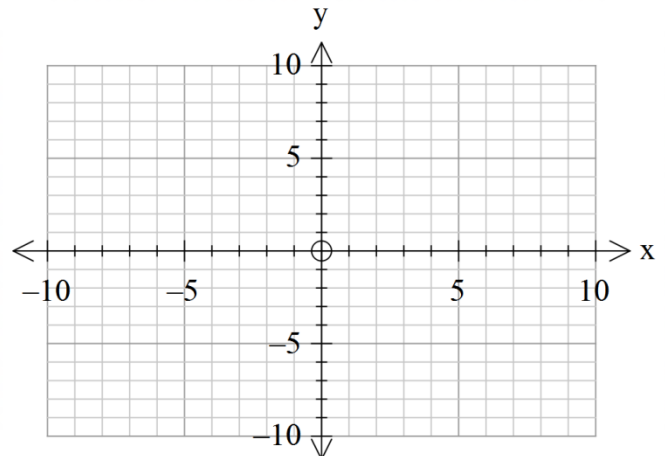
$$11. f(x) = \begin{cases} 2x, & \text{if } x \neq 0 \\ 1, & \text{if } x = 0 \end{cases}$$

a) Domain: _____

b) Range: _____

c) Intercepts: _____

Is the graph continuous? _____



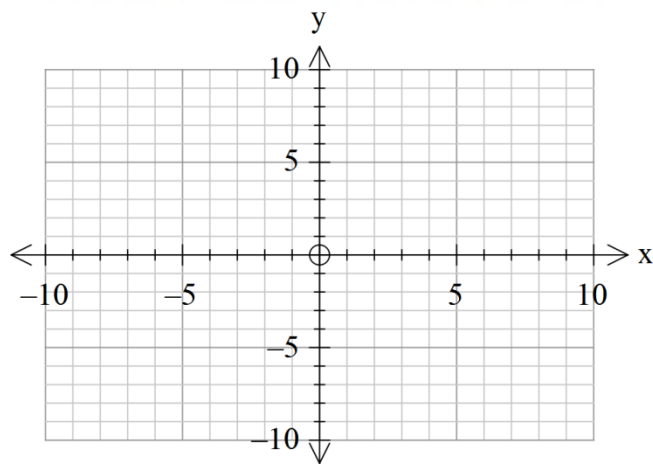
$$12. f(x) = \begin{cases} x+3, & \text{if } -2 \leq x < 1 \\ 5, & \text{if } x = 1 \\ -x+2, & \text{if } x > 1 \end{cases}$$

a) Domain: _____

b) Range: _____

c) Intercepts: _____

Is the graph continuous? _____



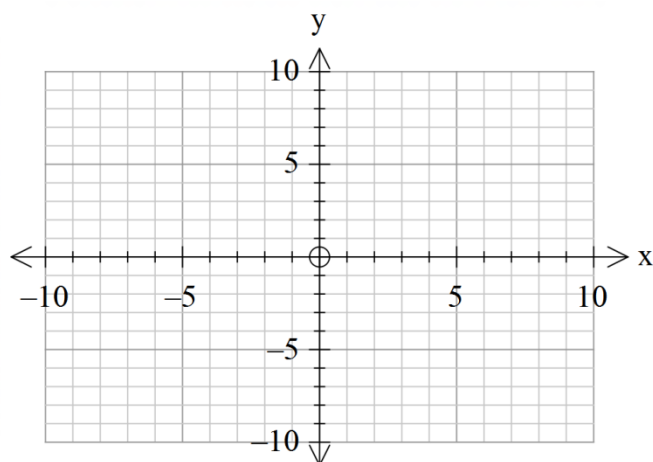
$$13. f(x) = \begin{cases} 1+x, & \text{if } x < 0 \\ x^2, & \text{if } x \geq 0 \end{cases}$$

a) Domain: _____

b) Range: _____

c) Intercepts: _____

Is the graph continuous? _____



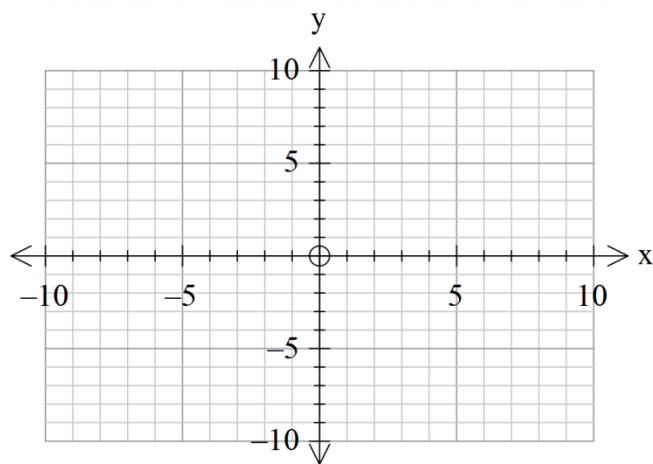
$$14. f(x) = \begin{cases} |x|, & \text{if } -2 \leq x < 0 \\ x^3, & \text{if } x > 0 \end{cases}$$

a) Domain: _____

b) Range: _____

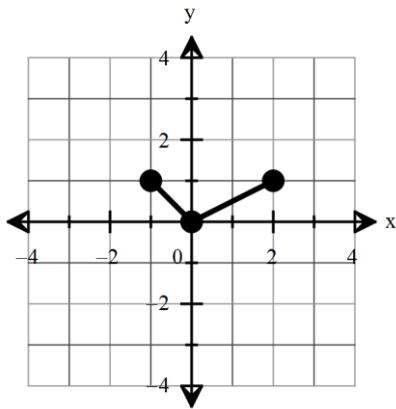
c) Intercepts: _____

Is the graph continuous? _____

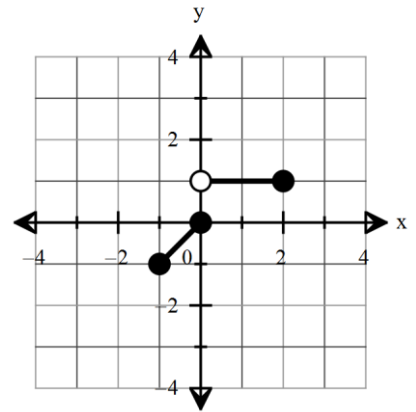


The graph of a piecewise function is given. Write a definition for each function.

15.



16.



Review

Solve

17. $5 - 2\sqrt{x} = 3$

18. $-\sqrt[3]{x} + 3 = 0$

19. $(x+3)^{\frac{1}{2}} - 1 = x$

20. $2(x-1)^{\frac{4}{3}} + 4 = 36$